

# CLAIMS

1. A copper foil provided with an ultra thin primer resin layer for securing good laminating adhesiveness with a resin base material on one side of a copper foil without roughening treatment, where in,

a copper foil with an ultra thin adhesive layer for a printed wiring board is characterized in that a ultra thin primer resin layer of a converted thickness of 1 to 5  $\mu\text{m}$  is provided on a surface of a copper foil having a surface roughness ( $R_z$ ) of 2  $\mu\text{m}$  or less not undergone said roughening treatment.

2. The copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 1, comprising a silane coupling agent layer on the surface of the copper foil provided with the ultra thin primer resin layer.

3. The copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 2, wherein said silane coupling agent layer is formed using an amino-based silane coupling agent or a mercapto-based silane coupling agent.

4. The copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 1, wherein said ultra thin primer resin layer is formed using a resin mixture consisting of 20 to 80 parts by weight of an epoxy resin (containing a curing agent), 20 to 80 parts by weight of a solvent-soluble aromatic polyamide resin polymer, and an appropriate quantity added as required of a curing accelerator.

5. The copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 4, wherein said aromatic polyamide polymer using for said ultra thin primer resin layer is obtained by allowing an aromatic polyamide to react with a rubber-like resin.

6. The copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 1, wherein said ultra thin primer resin layer is formed using a resin mixture consisting of 20 to 50 parts by weight of an epoxy resin (containing a curing agent), 50 to 95 parts by weight of a polyether sulfon resin (having a hydroxyl group or an amino group at an proximal end, and soluble in a solvent), and an appropriate quantity added as required of a curing accelerator.

7. The copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 1, wherein the resin flow when measured in accordance with MIL-P-13949G in the MIL Standard is 5% or less.

8. A method for manufacturing a copper foil with an ultra thin adhesive layer for a printed wiring board characterized in that a resin solution used in the formation of an ultra thin primer resin layer is prepared by the procedures of the following Step a and Step b; and a converted thickness of 1 to 5  $\mu\text{m}$  of said resin solution is applied onto a surface of a copper foil on which a silane coupling agent layer is formed, and dried to be in a semi-cured state comprising the Step a. and the Step b.:

Step a. An epoxy resin (containing a curing agent), an aromatic polyamide polymer soluble in a solvent, or a polyether sulfon resin, and an appropriate quantity added as required of a curing accelerator being mixed to form a resin mixture.

Step b. Said resin mixture being dissolved using an organic solvent to form a resin solution of a resin solid content of 10% by weight to 40% by weight.

9. A copper-clad laminate using a copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 1.

10. A copper-clad laminate using a copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 2.

11. A copper-clad laminate using a copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 3.

12. A copper-clad laminate using a copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 4.

13. A copper-clad laminate using a copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 5.

14. A copper-clad laminate using a copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 6.

15. A copper-clad laminate using a copper foil with an ultra thin adhesive layer for a printed wiring board according to claim 7.